



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,984	09/30/2003	Brian K. Smith	CE11461JDP	4974
30016 7590 01/12/2007 CARDINAL LAW GROUP, LLC SUITE 2000 1603 ORRINGTON AVENUE EVANSTON, IL 60201			EXAMINER CASCA, FRED A	
			ART UNIT 2617	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/12/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/674,984

Applicant(s)

SMITH ET AL.

Examiner

Fred A. Casca

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 20-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-19 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/24/03.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_.

**DETAILED ACTION**

1. The abstract of the disclosure is objected to because it includes the term "invention". The examiner suggests the term "invention" to be replaced by the term application. Correction is required. See MPEP § 608.01(b).

***Election/Restriction***

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. **Claims 1-19** drawn to a method for enhance passive scanning or a wireless local area network, classified in class 370 subclass 338.

II. **Claims 20-24** drawn to a computer usable medium including a program code to determine a power mode for a wireless communication device based on the scan start time, classified in class 455, subclass 13.41 and 513.

3. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as a determining a power mode for the wireless device, while invention I has passive scanning method in a wireless local area network. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

A telephone call was made to Larry Brown, applicant's representative, on January 8, 2007 to request an oral election to the above restriction requirement. Mr. Brown elected the first group of claims, namely claim 1-19 without traverse.

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 6, and 8-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orava et al (US-2003/0177267 A1) in view Laux et al (US 2004/0090929 A1).

Referring to claim 1, Orava discloses an enhanced passive scanning method for a wireless local area network (abstract and paragraph 29, "passive scanning"), comprising receiving at least one of a beacon signal and a gratuitous probe response (figure 4 and paragraph 53).

Orava does not specifically disclose updating a site timing table entry in a site timing table based on the received beacon signal and gratuitous probe response; and setting a scan start time based on entries in the updated site timing table.

Laux discloses measuring intervals between beacons received in wireless communication system and then adjusting a timer if according to the values of the intervals (paragraphs 114 and figures 6, 7, 11, "wireless device 110 probing its access point 102 and adjusting its timer",

“determines whether the interval between beacons . . . scanned represents a . . . long period of time”).

It would have been obvious to one of the ordinary skills in the art at the time of invention to modify the method of Orava by incorporating the teachings of Laux and consequently providing the method of Orava with a sit timing table to insert the results of measuring intervals into the table and updating the table, and then set a scan start time based on entries in the updated table, for the purpose of providing an efficient and energy saving scanning system where battery power is saved by preventing frequent unnecessary scanning.

Referring to claim 14, claim 14 defines an enhanced passive scanning system reciting features analogous to the features of the passive scanning method defined by claim 1 (as rejected above). Thus, the combinations Orava/Laux disclose all elements of claims 14 (please see the rejection of claim 1 above).

Referring to claims 2 and 15, the combinations of Orava/Laux disclose the method and system of claims 1 and 14, and further disclose at least one of the beacon signal and the gratuitous probe response are received from at least one of a mobile station and an access point (Orava, figure 4).

Referring to claims 6 and 19, the combinations of Orava/Laux disclose the method of claims 1 and 14, and further disclose determining a power mode for a wireless communication device based on the scan start time (Laux, paragraph 114, note that interval between beacons is determined and then probing the access time is set according to the determined intervals, further

probing the access points prompts the device 110 to be in an active mode, thus a different power mode. Hence, a power mode is inherently determined based on the scan start time).

Referring to claim 8, the combinations of Orava/Laux disclose the method of claim 1 and further disclose scanning at least one channel for the beacon signal and the gratuitous probe response (Orava, figure 4 and paragraph 5).

Referring to claim 9, the combinations of Orava/Laux disclose the method of claim 8 and further disclose scanning at least one channel comprises one of performing an active scan, performing a passive scan, and performing an enhanced passive scan (Orava, figure 4 and paragraph 5).

Referring to claim 10, the combinations of Orava/Laux disclose the method of claim 1 and further disclose creating the site timing table with at least one site timing table entry, the site timing table based on at least one of a received beacon signal and a gratuitous probe response (see rejection of claim 1).

Referring to claims 11 and 16, the combinations of Orava/Laux disclose the method and system of claims 10 and 15, and further disclose creating the site timing table entry comprises tuning to an access point channel, receiving at least one of the beacon signal and the gratuitous probe response, collecting transmission measurements of an access point, and storing access

point information in the site timing table (Laux, paragraphs 114 and figures 6, 7, 11, note that creating a list or table of beacons inherently include listening and tuning to the beacon signals).

Referring to claims 12 and 17, the combinations of Orava/Laux disclose the method of claims 1 and 14, and further disclose selecting an access point based on at least one of the received beacon signals and gratuitous probe responses (figure 4).

Referring to claims 13 and 18, the combinations of Orava/Laux disclose the method of claims 1 and 14, and further disclose generating an enhanced passive scan schedule based on at least one site timing table entry in the site timing table, the enhanced passive scan schedule including a channel number, a local scan start time, and a maximum channel scan time for each site timing table entry in the site timing table (see rejection of claims 1 and 3).

6. Claim 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orava et al (US 2003/0177267 A1) in view Laux et al (US 2004/0090929 A1) and further in view of well known prior art (MPEP 2144.03).

Referring to claim 3, the combinations of Orava/Laux disclose the method of claim 1 wherein the beacon signal is received from an access point (see rejection of claim 1 above).

The combinations of Orava/Laux do not disclose, the beacon signal includes an access-point timestamp, a beacon interval, a basic service set identifier, and a traffic indication map.

The examiner takes official notice of the fact that an access-point timestamp, beacon interval, a basic service set identifier, and a traffic indication map are well known terms.

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Orava/Laux by incorporating well-known concepts in the art for the purpose of providing an efficient and energy saving scanning system.

Referring to claim 4, the combinations of Orava/Laux disclose the method of claim 1 wherein gratuitous probe response is received from an access point.

The combinations of Orava/Laux do not disclose an access-point timestamp, a beacon interval, a basic service set identifier, and a traffic indication map.

The examiner takes official notice of the fact that an access-point timestamp, beacon interval, a basic service set identifier, and a traffic indication map are well known terms.

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Orava/Laux by incorporating well known concepts in the art for the purpose of providing an efficient and energy saving scanning system.

Referring to claim 5, the combinations of Orava/Laux disclose the method of claim 1.

The combinations of Orava/Laux do not disclose the site timing table includes access point timestamp, a local station timestamp, a beacon and probe interval.

The examiner takes official notice of the fact that an access-point timestamp, beacon interval, a basic service set identifier, and a traffic indication map are well known terms.



Art Unit: 2617

--- It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Orava/Laux by incorporating well known concepts in the art for the purpose of providing an efficient and energy saving scanning system.

### *Allowable Subject Matter*

7. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

--- The following the examiner's reasons for allowance:

References Orava et al (US 2003/0177267 A1) and Laux et al (US 2004/0090929 A1) are made of record as teaching the art of scanning beacons signals in a WLAN. However, none of the cited prior art teaches or suggests directly or indirectly the limitation "determining a power mode based on the scan start time comprises determining a time period remaining until a target beacon transmission time and a target gratuitous probe response transmission time is scheduled" in combination with other limitation of the independent claims 1 and 6.

### *Conclusion*

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred A. Casca whose telephone number is (571) 272-7918. The examiner can normally be reached on Monday through Friday from 9 to 5.

--- If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid, can be reached at (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LESTER G. KINCAID  
SUPERVISORY PRIMARY EXAMINER